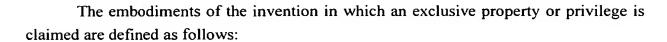
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- An aircraft weather radar display method comprising:
 selecting a display distance value;
 retrieving weather radar return information stored in a plane of voxels in a
 buffer based on the selected display distance value and aircraft position
 information; and
 generating an image based on the retrieved weather radar return information.
- 2. The method of Claim 1, wherein the voxel plane associated with the retrieved weather return information is perpendicular to the aircraft's heading.
 - 3. The method of Claim 1, wherein the voxel plane associated with the retrieved weather return information is at a constant range from the aircraft.
 - The method of Claim 1, further comprising selecting a display altitude range, wherein retrieving radar return information is further based on the selected display altitude range
 - 5. The method of Claim 1, wherein at least one of the selecting the display distance value or the display altitude range is performed by a user using a user interface device in the aircraft.
- An aircraft weather radar display method comprising:
 retrieving weather radar return information stored in a buffer based on a flight
 plan;
 generating an image based on the retrieved weather return information; and
 displaying the generated image.
- 7. The method of Claim 6, wherein the flight plan comprises a vertical profile with a plurality of segments.
 - 8. The method of Claim 6, wherein retrieving weather radar return information comprises retrieving weather radar return information stored in a plurality of voxel planes that correspond to the plurality of segments of the vertical profile.
- 30 9. The method of Claim 8, wherein the generated image is a plan view image.

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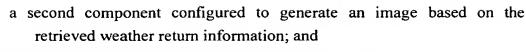
- 10. The method of Claim 6, wherein the flight plan comprises a directional profile with a plurality of segments.
- 11. The method of Claim 10, wherein retrieving weather radar return information comprises retrieving weather radar return information stored in a plurality of vertical columns that correspond to points along the plurality of segments of the directional profile.
- 12. The method of Claim 11, wherein the generated image is a vertical slice view image.
 - 13. An aircraft weather radar display system comprising:
 - a memory configured to store weather radar return information in a buffer; a processor coupled to the memory, the processor comprising:
 - a first component configured to receive a display distance value signal;
 - a second component configured to retrieve weather radar return information stored in a plane of voxels in the buffer based on the selected display distance value and aircraft position information; and
 - a third component configured to generate an image based on the retrieved weather radar return information; and
 - a display device configured to display the generated image.
- 14. The system of Claim 13, wherein the voxel plane associated with the retrieved weather radar return information is perpendicular to the aircraft's heading.
- 15. The system of Claim 13, wherein the voxel plane associated with the retrieved weather radar return information is at a constant range from the aircraft.
- 16. The system of Claim 13, further comprising a user interface device coupled to the processor and configured to generate a display altitude range signal, wherein the second component retrieves radar return information further based on the selected display altitude range
- 17. The system of Claim 13, further comprising a user interface device coupled to the processor and configured to generate the display distance value signal.
 - 18. An aircraft weather radar display system comprising:
 - a memory configured to store weather radar return information in a buffer; a processor coupled to the memory, the processor comprising:
 - a first component configured to retrieve weather radar return information stored in a buffer based on a flight plan;

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a display device configured to display the generated image.

- 19. The system of Claim 18, wherein the flight plan is a vertical profile flight plan with a plurality of segments.
 - 20. The system of Claim 19, wherein the first component retrieves weather radar return information weather radar return information stored in a plurality of voxel planes that correspond to the plurality of segments of the vertical profile flight plan.
 - 21. The system of Claim 18, wherein the generated image is a plan view image.
 - 22. The system of Claim 18, wherein the flight plan is a directional profile flight plan with a plurality of segments.
 - 23. The system of Claim 22, wherein the first component retrieves weather radar return information stored in a plurality of vertical columns that correspond to points along the plurality of segments of the directional profile flight plan.
 - 24. The system of Claim 23, wherein the generated image is a vertical slice view image.
 - 25. An aircraft weather radar display computer program product comprising:
 - a first component configured to store weather radar return information in a buffer;
 - a second component configured to receive a display distance value signal;
 - a third component configured to retrieve weather radar return information stored in a plane of voxels in the buffer based on the selected display distance value and aircraft position information; and
 - a fourth component configured to generate an image based on the retrieved weather radar return information.
 - 26. The product of Claim 25, wherein the voxel plane associated with the retrieved weather radar return information is perpendicular to the aircraft's heading.
 - 27. The product of Claim 25, wherein the voxel plane associated with the retrieved weather radar return information is at a constant range from the aircraft.

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- 28. The product of Claim 25, further comprising a fifth component configured to generate a display altitude range signal, wherein the second component retrieves radar return information further based on the selected display altitude range
- 29. The product of Claim 25, further comprising a fifth component configured to generate the display distance value signal.
 - 30. An aircraft weather radar display computer program product comprising:
 - a first component configured to store weather radar return information in a buffer;
 - a second component configured to retrieve weather radar return information stored in the buffer based on a flight plan; and
 - a third component configured to generate an image based on the retrieved weather radar return information
 - 31. The product of Claim 30, wherein the flight plan is a vertical profile flight plan with a plurality of segments.
 - 32. The product of Claim 31, wherein the second component retrieves weather radar return information weather radar return information stored in a plurality of voxel planes that correspond to the plurality of segments of the vertical profile flight plan.
 - 33. The product of Claim 32, wherein the generated image is a plan view image.
- 34. The product of Claim 30, wherein the flight plan is a directional profile flight plan with a plurality of segments.
 - 35. The product of Claim 34, wherein the second component retrieves weather radar return information stored in a plurality of vertical columns that correspond to points along the plurality of segments of the directional profile flight plan.
- 36. The product of Claim 35, wherein the generated image is a vertical slice view 25 image.